

01-11-2000

GB 009902425

- 20 -

68691004.351

Claims

- 5 1. An automated immunoassay apparatus (1) comprising:  
a movable arm (7a, 7b);  
a pipette mechanism (6) for aspirating and/or  
dispensing fluid, said pipette mechanism (6) being  
connected to said movable arm (7a, 7b);  
10 characterised in that:  
said pipette mechanism further comprises an  
integral clamp (23, 27, 31) for picking up and  
transporting one or more items other than a disposable  
tip (9).
- 15 2. An automated immunoassay apparatus as claimed in  
claim 1, wherein said clamp (23, 27, 31) comprises a  
collar (27).
- 20 3. An automated immunoassay apparatus as claimed in  
claim 2, wherein said collar (27) is movable in a first  
axial direction.
- 25 4. An automated immunoassay apparatus as claimed in  
claim 1, 2 or 3, wherein said clamp (23, 27, 31) comprises  
a portion (23) for engagement with a disposable sample  
tip (9) or a reagent tip.
- 30 5. An automated immunoassay apparatus as claimed in  
claim 4, wherein said portion (23), in use,  
substantially resists movement in said first axial  
direction.
- 35 6. An automated immunoassay apparatus as claimed in  
claim 4 or 5, wherein said portion (23) is spring  
loaded.

AMENDED SHEET

- 21 -

7. An automated immunoassay apparatus as claimed in claim 6, wherein said portion (23) may move in a direction opposed to said first axial direction.

5 8. An automated immunoassay apparatus as claimed in any of claims 4-7, wherein said portion (23) co-operates with said collar (27) to clamp a pickup block (34) or other article disposed between said collar (27) and said portion (23).

10

9. An automated immunoassay apparatus as claimed in any preceding claim, wherein said one or more items are selected from a group comprising: a microplate (13), a plate holder (35), one or more sample tubes, a sample rack (4), a reagent container, a reagent rack (11), a control container, a control rack (15), and a tip rack (8;12).

15

10. An automated immunoassay apparatus as claimed in any preceding claim, further comprising a pickup block (34) and wherein said clamp (23,27,31) engages in use with a slot or recess (32) provided in said pickup block (34).

20

11. An automated immunoassay apparatus as claimed in claim 10, wherein said pickup block (34) is connected to a holder (35) suitable for carrying a microplate (13).

25

12. An automated immunoassay apparatus as claimed in claim 10 or 11, wherein said clamp (23,27,31) and/or said pickup block (34) further comprise anti-rotation means (27,36) for substantially preventing said pickup block (34) and any item attached thereto from rotating.

30

13. An Enzyme Linked ImmunoSorbent Assay system comprising automated immunoassay apparatus as claimed in any preceding claim.

35

AMENDED SHEET

- 22 -

14. A method of automatically performing immunoassay procedures comprising:

providing a movable arm (7a, 7b);

5 aspirating and/or dispensing fluid using a pipette mechanism (6), said pipette mechanism (6) being connected to said movable arm (7a, 7b);

characterised in that said method further comprises the step:

10 picking up and transporting one or more items other than a disposable tip (9) using said pipette mechanism (6) having an integral clamp (23, 27, 31).

15 15. A method as claimed in claim 14, wherein said method is used for carrying out Enzyme Linked ImmunoSorbent Assay procedures.

AMENDED SHEET

01-11-2000

GB 009902425

- 23 -

16. An automated immunoassay apparatus comprising:  
at least one washer (17), reader (18) or incubator  
(16) module; and  
a work area (2) where, in use, components and  
consumables necessary for carrying out diagnostic tests  
are arranged;  
characterised in that said apparatus further  
comprises:  
a retractable drawer (14) for holding at least one  
first item selected from the group comprising: a  
microplate (13), a plate holder (35), one or more sample  
tubes, a sample rack (4), a reagent container, a reagent  
rack (11), a control container, a control rack (15), and  
a tip rack (8;12), said retractable drawer (14) being  
disposed above said work area (2) and wherein said  
retractable drawer (14) may be withdrawn to provide  
access to said work area (2) and may be ejected to cover  
at least part of said work area (2).
17. An automated immunoassay apparatus as claimed in  
claim 16, wherein said retractable drawer (14) comprises  
an aperture through which a disposable tip (8;12) may be  
passed in use.
18. An automated immunoassay apparatus as claimed in  
claim 17, further comprising a chute (42) arranged for  
receiving a disposable tip (8;12) passed in use through  
said aperture in said retractable drawer (14) when said  
retractable drawer (14) is at least partially extended.
19. An automated immunoassay apparatus as claimed in  
claim 18, wherein said chute (42) is generally aligned  
with said aperture in said retractable drawer (14) when  
said retractable drawer (14) is fully extended.

AMENDED SHEET

01-11-2000.

GB 009902425

- 24 -

20. An automated immunoassay apparatus as claimed in any of claims 16-19, wherein said retractable drawer (14) is arranged to hold at least one, at least two, at least three or at least four microplates (13).
- 5 21. An automated immunoassay apparatus as claimed in any of claims 16-20, wherein said retractable drawer (14) is at least partially retractable whilst said at least one first item is held, in use, on said  
10 retractable drawer (14).
22. An automated immunoassay apparatus as claimed in any of claims 16-21, wherein said at least one first item comprises a microplate (13) and said apparatus  
15 further comprising transport means (23,27,31) for moving said microplate (13) to said at least one washer (17), reader (18) or incubator (16) module.
23. An automated immunoassay apparatus as claimed in  
20 any of claims 16-22, further comprising transport means (23,27,31) for moving said at least one first item, said transport means (23,27,31) comprising a pipette means (6) having an integral clamp.
24. An automated immunoassay apparatus as claimed in  
25 claim 23, wherein said transport means (23,27,31) comprises an end portion (23) for receiving a disposable tip (8,12) and a collar portion (27), said collar portion (27) being movable to clamp a said first item  
30 and/or to eject a disposable tip (8,12) held on said end portion (23).
25. A method of automatically performing immunoassay procedures, comprising the steps of:  
35 providing at least one washer (17), reader (18) or incubator (16) module; and  
providing a work area (2) where, in use, components and consumables necessary for carrying out diagnostic

AMENDED SHEET

01-11-2000

GB 009902425

- 25 -

tests are arranged;

characterised in that said method further comprises the step of:

5 using a retractable drawer (14) to hold at least one item selected from the group comprising: a microplate (13), a plate holder (35), one or more sample tubes, a sample rack (4), a reagent container, a reagent rack (11), a control container, a control rack (15), and a tip rack (8,12), said retractable drawer (14) being  
10 disposed above said work area (2) and wherein said retractable drawer (14) may be withdrawn to provide access to said work area (2) and may be ejected to cover at least part of said work area (2).

15 26. A method of automatically performing immunoassay procedures as claimed in claim 25, wherein said at least one item comprises a microplate (13), said method further comprising the step of transporting said microplate (13) from said retractable drawer (14) to  
20 said at least one washer (17), reader (18) or incubator (16) module using a pipette means (6) having an integral clamp.

25 27. A method as claimed in claim 25 or 26, wherein said method is used for carrying out Enzyme Linked ImmunoSorbent Assay procedures.

AMENDED SHEET